

Claims

1. A switch device comprising a face plate and a single switch oscillator having a capacitive component, the capacitive component having a first capacitor plate arranged adjacent the face plate, the face plate preventing electrical contact between the user and the oscillator whereby an object placed adjacent the face plate acts as a second capacitor plate thereby altering the frequency of the oscillator, control means being provided to sense the change in frequency and to actuate the switch in response to such a change.
2. A switch device according to claim 1 in which the plate is made from electrically insulating material.
3. A switch device according to claim 1 or 2 in which the face plate is arranged so that it can be retrofit to existing switch mountings.
4. A switch device according to any preceding claim in which the detection of the shift in frequency of the switch oscillator is achieved within the micro controller by software.
5. A switch device according to claim 4 in which the software is arranged to filter out noise and/or frequency drift.
6. A switch device according to claim 4 or 5 in which the frequency from the oscillator is recalculated at fixed periods by the micro controller.
7. A switch device according to any of claims 4 to 6 in which the software within the micro-controller automatically detects the frequency of the mains supply to which it is connected, via an AC Zero detector circuit.

8. A switch device according to claim 7 in which the software alters the firing signal to an AC trigger circuit based on the mains frequency calculated.
9. A switch device according to any preceding claim in which the components of the switching device are arranged on a printed circuit board.
10. A switch device according to claim 9 in which several such switching devices are arranged on a single circuit board adjacent a single face plate.
11. A switch device according to claim 10 in which the face plate has markings thereon to illustrate where a user should touch the face plate in order to activate particular individual switching devices.
12. A switch device according to any preceding claim in which the switching device is used to switch a light circuit.
13. A switch device according to claim 12 in which software and/or hardware within the light circuit provides one or more of the following functions:-
 - a) gradual ramping up of current to the light to preserve bulb life,
 - b) dimmer function
 - c) random light switching
 - d) timed light switching
 - e) comfort light function
 - f) gradual lighting up for use as an alarm

20

14. A switch device according to claim 12 or 13 in which the switch includes an integrated smoke detector system which is electronically integrated with the light circuit corresponding to the switch.
15. A switch device according to claim 14 in which the smoke detector system comprises a smoke detector element and a sounder which are located within the switch.
16. A wall mounted mains light switch having a smoke detector therein.
17. A wall mounted mains light switch according to claim 16 in which the smoke detector is arranged to activate an alarm.
18. A wall mounted mains light switch according to claim 17 in which the alarm is one or both of a sounder and a light.
19. A wall mounted mains light switch according to claim 17 in which the smoke detector activates the light to which the switch relates as an alarm.
20. A wall mounted mains light switch according to claim 17 in which the switch includes a passive infra red (PIR) pyro sensor element or other movement and heat sensing device which, with a sounder, acts as a burglar alarm/deterrent.
21. A wall mounted mains light switch according to any of claims 17 to 20 in which the switch is connected to a pad capable of vibrating on application of electrical power.

22. A mains light switch including a transmitter for sending outgoing signals along a mains electricity cable, a receiver for receiving incoming signals from the mains electricity cable and a control device arranged to process the incoming and outgoing signals.
23. A mains light switch according to claim 22 in which the switch includes a microphone arranged to receive sound from the room in which it is located.
24. A mains light switch according to claim 23 in which the signal received by the microphone is transmitted via the mains cable to another light switch on the circuit and the signal can be played through a speaker on the other switch.
25. A mains light switch according to claim 24 in which a noise level indicator may be provided, such as a series of LED's which are progressively illuminated as noise level increases.
26. A mains light switch according to claims 23, 24 or 25 in which the control unit in the switch alters the light settings according to the sound level in the room.
27. A mains light switch according to any of claims 23 to 26 in which an alarm is provided which sounds when the noise exceeds a certain level.
28. A switch according to a combination of any of claims 1 to 15 and any of claims 16 to 20.
29. A switch according to a combination of any of claims 1 to 15 and any of claims 22 to 27.

22

30. A switch according to a combination of any of claims 16 to 21 any of claims 22 to 27.
31. A switch according to a combination of any of claims 1 to 15, any of claims 16 to 21 and any of claims 22 to 27.
32. A switch according to any preceding claim in which the switch is programmed with a specific function or functions prior to installation.
33. A switch according to any of claims 1 to 31 in which the switch is programmable by the user.
34. A switch according to claim 33 in which the programming of the switch is effected by the user selecting a function from a list of functions and logging the selection on the switch.
35. A switch constructed and arranged substantially as described herein and with reference to Figs. 1 and 2.
36. A switch constructed and arranged substantially as described herein and with reference to Fig.3.
37. An array of switches constructed and arranged substantially as described herein and with reference to Fig.3.
38. A mains light switch constructed and arranged substantially as described herein and with reference to Figs. 1 to 3.